

REMARKS

Claims 1-19 are now pending in the application. Claims 1, 2, 9 and 16 have been amended. Claims 18, 19, and 20 have been added for substantive examination. The Examiner is respectfully requested to reconsider and withdraw the rejection(s) in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 103

Claims 1-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Neel (U.S. Pat. No. 2,906,006). This rejection is respectfully traversed. At the outset, Applicants submit that independent claims 1, 9 and 16 have been amended to recite the formation of multiple fluid flow paths. More specifically, claim 1 includes defining a first fluid flow path on said first outer face and defining a second fluid flow path between said first and second sheets at said plurality of patterned areas. Claim 9 includes defining a first fluid flow path on said first outer face and defining a second fluid flow path between said first and second sheets at said plurality of patterned areas. Claim 16 includes defining a first fluid flow path on said first outer face of said two piece bonded plate, and defining a second fluid flow path between said expanded portions, and a third fluid flow path between said second outer face of said two piece bonded plate.

Applicants respectfully submit that AAPA and the Neel patent fail to disclose such a method. Applicants note that AAPA describes prior methods of constructing bipolar plates wherein flow channels are first stamped into sheet material. Once stamped, a pair of sheets may be subsequently joined together. Neel at best discloses

a method for fabricating sheet metal whereby a hollow article is formed from roll bonding juxtaposed sheets of material. The method of making the hollow article of Neel however, is directed toward inflating tubes 48 from bands 45 (FIGS. 5 and 6) such that thick metal 43 remains between adjacent tubes 48. Specifically, the hollow article formed in accordance with (Neel) is characterized by desirably thick metal 43 between tubes which makes for better rigidity, strength and support while at the tubes the walls are relatively thin which in some practical applications makes for improved heat transmission (Col. 8, Lines 35 – 41). In this way, the method of making the hollow article of Neel is specifically directed and only applicable for formation of a single flow field through the article. The instant invention, as claimed, provides a method for injecting fluid between first and second bonded sheets wherein a first fluid flow path defined on a first outer face, a second fluid flow path defined through the expanded portions, and a third fluid flow path defined on a second outer face are created.

Further, regarding claims 2 and 20, the combined cited art does not teach, disclose, or suggest anti-bonding material compatible for fuel cell use. Regarding claim 4, the cited art does not teach, disclose or suggest a joining step resulting in a reduced thickness. Regarding new claims 18 and 19, the cited art does not teach, disclose or suggest outward projection of the second sheet to form a third flow path on its outer face.


In view of the amendments and for all of the reasons discussed above, reconsideration and withdrawal of this rejection are respectfully requested.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: September 26, 2005
HARNESS, DICKEY & PIERCE, P.L.C.
P.O. Box 828
Bloomfield Hills, Michigan 48303
(248) 641-1600

By: 

Anna M. Budde
Reg. No. 35,085

Brian D. Hollis
Reg. No. 51,075

CORRESPONDENCE ADDRESS:
Kathryn A. Marra
General Motors Corporation
Legal Staff - Mail Code 482-C23-B21
PO Box 300 - 300 Renaissance Center
Detroit, Michigan 48265-3000
Ph: 313-665-4708
Fax: 313-665-4976

BDH/cr